



State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF WATER QUALITY

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April 26, 2002

Mr. Mark Dotson  
Western Utah Copper Co.  
1208 South 800 West  
Milford, UT 84751

Dear Mr. Dotson:

Subject: Proposed Plan of Operations, Maria Mine and Concentrator

I have received a copy of your proposed Plan of Operations. The operation will consist of an underground mine and concentrator. You propose to dispose of tailings from the concentrator in the existing Hidden Treasure pit. The underground mining operation will also generate waste rock.

Waste rock piles and tailings disposal are covered under the Utah Ground Water Protection Regulations, UAC R317-6 (enclosed) because in some cases they may affect ground water quality. If the potential for damage to beneficial uses of ground water is high, a mine operator may be required to obtain a ground water discharge permit for waste rock and tailings disposal. In other cases, where the operator can demonstrate that this potential is low, the facility may qualify for permit-by-rule status under UAC R317-6-6.2A(1).

We currently do not have enough information on the site characteristics, leaching characteristics of the tailings and waste rock, or your planned tailings and waste rock management to evaluate the potential effects on ground water quality. This potential will depend on your choice of an appropriate management strategy for the nature of the waste and the site conditions. You may choose an overly conservative approach to waste management in lieu of investigations into site characteristics or waste characterization, provided you can demonstrate that ground water pollution will not occur. Because of different possible findings of investigations, and different choices for waste management, we cannot at this time specify what information will be necessary to provide this demonstration. Information on the following topics, specific to this case, may be useful to evaluate any potential threats to ground water:

1. If your proposed waste management option will allow a discharge of contaminants to the subsurface, you must provide information on the chemical quality of process waters and of leachate from the mine waste. During mine exploration and development, the different geochemical rock units which will be involved in the mine workings should be identified. Representative samples of these rock units from drill holes, existing mine workings or outcrops should be tested for their potential to generate leachate which could cause ground water pollution over time. If sulfide materials will be present in the mine wastes they should be tested for their potential to generate acid drainage with weathering over time. Information on the chemical quality of process waters should be obtained from bench-scale testing of the planned milling process during mine development.

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2. The geology, structure and ground water conditions at the site should be evaluated to determine if leachate from mine waste disposal sites or discharge of process waters could affect ground water quality. The chemical quality of the ground water from the uppermost saturated zone under waste disposal sites would determine the ground water class of the receiving ground water, as defined in R317-6-3. Ground water of higher quality (Class I or II) receives greater protection under the Regulations. Existing ground water quality under the site can be compared to the chemical quality of leachate and process waters. Information on the hydrogeologic characteristics of the subsurface beneath locations where mine waste leachate or process waters would be discharged can be used to determine if pathways exist for these discharges to cause unacceptable degradation of ground water quality.
3. You should propose appropriate management of mine wastes and process waters to prevent ground water contamination. Waste management should be based either on adequate investigation to evaluate the potential for ground water pollution or an overly conservative approach to prevent discharge of contaminants to the subsurface. If the chemical quality of leachate is not compatible with the receiving ground water, or if subsurface hydrogeologic conditions are not known, proper management and disposal can prevent the discharge of contaminants from the disposal sites. In this case, the characteristics of surface piles of waste rock and tailings can be evaluated for the area's climate by using the HELP (Hydrologic Evaluation of Landfill Performance) model or similar models, which can estimate the amount of leachate which would be discharged after the waste pile reaches equilibrium with precipitation over time. In many cases, in a dry climate leachate generation can be minimized by appropriate capping and revegetation of the waste piles, and caps can be designed using the model for guidance.

At present we do not have enough information on the potential for ground water pollution and your preferred options to evaluate and manage this potential to specify any particular course of action for you to follow. Please contact me at (801) 538-6146 if you have any questions or if you would like to arrange a meeting to determine appropriate information needed to evaluate your site.

Sincerely,



Mark Novak, Environmental Scientist  
Ground Water Protection Section

MN:mhf

Enclosure

cc: Southwest Utah Health Dept. (W/o encl)  
Tom Munson, DOGM (W/o encl)  
Ed Ginouves BLM Cedar City Field Office (W/o encl)